ELECTRICITY on the FARM

THE NATIONAL MAGAZINE OF RURAL ELECTRIFICATION

NOVEMBER, 1942

FEATURED THIS MONTH:

Good Cow Air That Saves Barns
McNeals Make Electricity Work
Welders Speed Farm Production
Handling Hybrid Seed Corn
Scalders for Hens and Turkeys
Electricity from the Wind
What I Can Do for War
Ultra-Violet for Hens & Humans
Electrical Housekeeping
Thanksgiving Dinner Tips
Questions and Answers

A CASE-SHEPPERD-MANN PUBLICATION

HELP for tired eyes!

Right now your eyes need all the help they can get. For today's extra jobs, like reading, sewing, and mending, mean that your eyes are working harder and longer than ever. To help you guard them from strain, and get the most from lamps you have, General Electric offers these two simple suggestions:

1. Wash the bulbs in your lamps and the reflector bowls on sight-saving I.E.S. lamps . . . and wash 'em *regularly.* Brush the lamp shades, too. You'll get up to 50% more light, to make reading or sewing easier. (Make full use of other lighting, too, by keeping bulbs, reflectors and globes in lighting fixtures clean!)

2. Buy carefully when you need a lamp bulb. See that it is the right size to protect eyesight. And look for the mark G-E, to make sure of G-E MAZDA lamps . . . the kind made to Stay Brighter Longer.

G-E MAZDA LAMPS

GENERAL ELECTRIC

Editor's Chat

Farm Equipment Rationing

Effective September 17, all farm machinery, with the exception of some hand tools and a few items of horse-drawn equipment, was frozen and made subject to rationing under a plan being administered by the Secretary of Agriculture. The order was a temporary one, to be replaced with new regulations after November 1.

County Rationing Committees are set up, the chairman being the county AAA chairman. The two other members are farmers (not members of the AAA committee or dealers) appointed by the county war board.

Prospects now are that materials to be allotted for the manufacture of farm equipment will probably be about 40 per cent of that used in 1940. (It was 85 per cent last year.) Of the 40 per cent, a major part will go into repair parts for existing equipment, with new equipment limited to perhaps one-fourth of the 1940 supply. It means further "tightening of our belts" on equipment, and much more intensive programs of rebuilding and repair. It is not a case of restricting farmers, but one of "how much material can we take away from munition production and still win?"

Too Many Esaus

"And Esau said to Jacob, Feed me, I pray thee, with that same red pottage; for I am faint . . . and he sold his birthright unto Jacob." Esau was not an evil man, but belly guided and short sighted.

. . . . . .

We are still losing this war. Just a look at a map and the uncolored facts will prove it. We can win; but it is going to take the combined efforts of all of us—not just steel and soldiers.

Our country is $80,000,000,000 in debt. We are spending at the rate of $227,000,000 per day. The government is our biggest buyer. Prices are going up. That is inflation in the early stages. Our economists and the experiences of other nations tell us that inflation and the subsequent deflation will rob us of our birthright of savings, insurance, freedom of action, and possibly our democratic form of government. These are things we are fighting for in this war. Everyone wants and expects to win. But there are some to whom the warm "red pottage" of politics, wages and profits still seem more important than a birthright.

Too many Esaus!

More Chickens Wanted

A tremendous push for the production of more chicken meat is under way. There is commencing to be a shortage of meat, not because of lack of production, but because of the enormous demands of our army and for shipment abroad. Poultry is the easiest meat producing industry to expand quickly.

Conditions are favorable for expansion. There is a large supply of wheat on hand for feeding. Because of the great increase in soy beans, peanuts and other oil producing crops, there is an ample quantity of oilmeals for protein supplements. The same housing and equipment which is used for hatching, brooding and feeding in the spring may be used throughout the year. Such use will tend to lower production costs. The demand for poultry is large and prices are good.

In increasing production, one should bear in mind that the extra demand is likely to be only temporary. It will therefore be good judgment to use the equipment and buildings one has to the fullest extent but not to make a great investment in new farm plant which will have no use after the emergency is over. Here is a real opportunity for helping the nation and making some money by the application of good thrifty management, and making the best of what you have.

Farm crops, farm boys and farm scrap are doing much to help win the war.

—9m proud 9 am a farmer!—

Geo. W. Kable

ELECTRICITY ON THE FARM
The National Magazine of Rural Electrification
CASE-SHEPPERD-MANN PUBLISHING CORP.
Editorial-Executive Offices: 24 W. 40th St., New York
NOVEMBER, 1942 VOL. 15, NO. 11

GEORGE W. KABLE, *Editor;* KARL M. MANN, *President;* FRED SHEPPERD, *Editorial Director;* I. H. CASE, *Vice-Pres. and Gen'l Mgr.;* K. H. GORHAM, *Advertising Manager;* H. S. ESSEX, *Production Manager.* CHICAGO: 6 No. Michigan Ave.—W. S. CLEVENGER, *Western Manager;* L. M. ROCHE, *Western Representative.* SAN FRANCISCO: 605 Market St.—C. H. WOOLLEY. Subscription price, 75 cents per year; single copies, 10 cents. Special bulk rates on application.
Contents copyrighted 1942 by Case-Shepperd-Mann Pub. Corp.

Good Cow Air That Saves Barns

An Account of Some Inexpensively Ventilated Barns in Pennsylvania. Providing Dry, Fresh Air, Not Too Cold, in Below Zero Weather. Removed Odors; Kept Barns Comfortable; Saved Decay. Cost $2 Per Cow to Install; Two Kw-hrs per Cow Per Month to Use.

By J. B. STERE*

"IS Your Barn All Wet?" is the subject of an article which appeared in the November and December, 1940, issues of ELECTRICITY ON THE FARM. The article provided information about dairy stable ventilation that many dairymen have long needed. It also gave those of us who assist farm customers to obtain maximum benefits from their use of electricity something to think about.

The described method of ventilation was developed by Messrs. F. L. Fairbanks and A. M. Goodman of Cornell University, and is known as the Fairbanks-Goodman System. The basis of this system is that a comfortable environment is maintained in a tightly constructed dairy stable by removing 60 cubic feet of air per minute per 1000 lbs. of cattle from near the stable floor, and replenishing it with fresh air equally distributed around the walls near the ceiling. This is best accomplished by means of an electric exhaust fan of proper capacity and the installation of fresh air intakes of proper design, location, and number. During periods when animals are stabled, the fan should be in continuous operation.

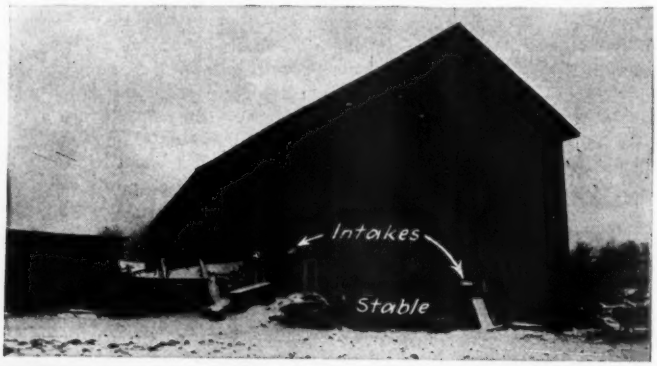
New York dairymen who have used this system for a number of years have found it to be practical and highly satisfactory. They report that building repair bills have been substantially reduced, health of animals improved, milk production maintained, drafts eliminated, colds prevented, and hay saved—all for a very small investment, and a low cost of operation. These results stimulated our interest in making observations of the performance characteristics of this syestem under conditions found in Western and North Central Pennsylvania.

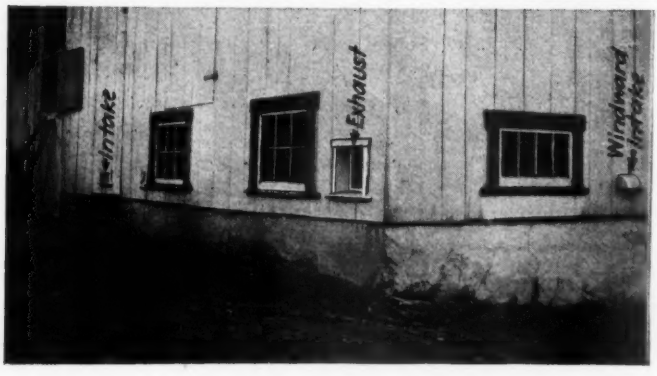
Experiences of the New York State dairymen prompted 32 similar installations in the territory served by our company during the Fall and Winter of 1941-'42. Arrangements were made with 12 of these dairymen, located in various sections of the territory, to keep performance records of their systems. These 12 installations represented stables with capacities ranging from 12 to 40 cows and with construction varying from one-inch wood walls to well insulated walls. A summarization of these records follows:

Preparing Stable for Ventilation

In no case was it necessary to remodel the stable before installing the system. An essential requirement was that a stable be tight and air leaks around doors and windows be stopped. When required, doors were provided for closing the hay chutes and passage ways to the silo or mow floor. Most of the barns were of the bank type which is rather typical in Pennsylvania and does not require complete insulation. Ceilings were insulated by two or three feet of hay or straw or a few inches of chaff on the mow floor immediately above, and where the barn floor was integral with the dairy stable ceiling, this was of double thickness.

Where cattle stalls were adjacent to exposed masonry walls, such walls were insulated. In one





Upper: The stable temperature in this barn varied between 52° and 58° F. when the outside temperature ranged between 32° and 0° F. Lower: Exhaust opening and two intake flues in the Wm. Hutchinson Barn, Alexander, Pa.

*Mr. Stere is rural service man for the West Penn Power Co., Pittsburgh, Pa., and a former member of the Agricultural Engineering Staff of Pennsylvania State College.

The fan unit used in the stable of E. L. Abplanap, Ridgway, Pa., is driven by a 1/20 hp. enclosed fan motor. This type motor can be placed directly in the air stream. When the fan is placed near the ceiling, a flue extending to within 15 inches of the floor is necessary. The door in the flue is for convenience in oiling the motor, also the door is opened as shown in the picture, to remove hay dust and to cool the stable in the summer. For winter ventilation, the door is kept closed, thereby removing the cool foul air from the floor.

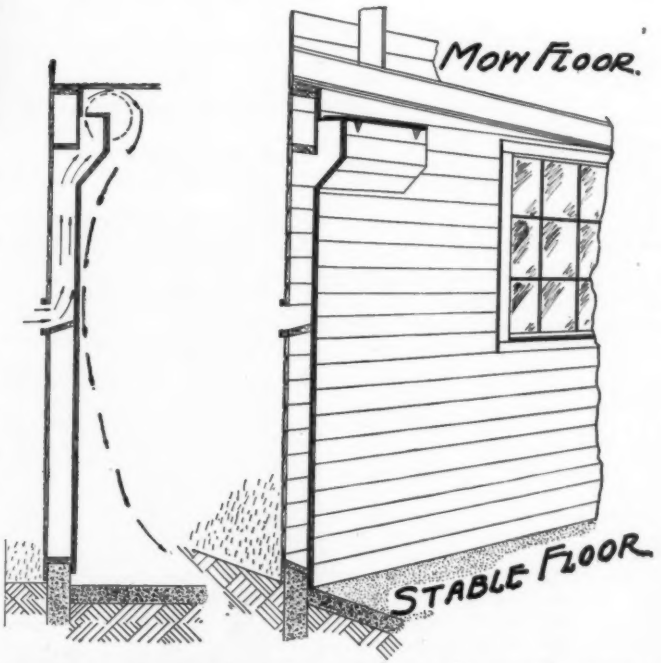
Fresh air is admitted to this stable through properly constructed and installed intake flues, four of which are pictured. Foul air is removed by a direct driven fan unit powered by a 1/40 hp. enclosed electric motor. This is on the farm of W. J. Youngdale, Brockport, Pa.

stable with box stalls along an eight-inch concrete wall exposed to outside conditions, it was not possible to maintain satisfactory temperatures in these stalls except by insulating the walls.

Temperatures Experienced

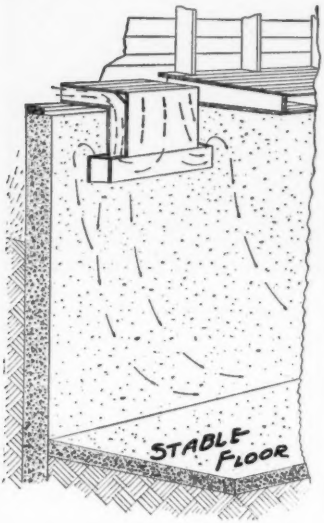
A factor that gave the greatest concern to dairymen who were considering the installation of a system was how it could be possible to maintain comfortable temperatures with a fan operating continuously. After some experience under severe winter conditions, this apprehension vanished.

With an outside temperature variation from 32° to 0° F., inside temperatures in uninsulated stables ranged between 50° and and 45° F. and between 55° and 50° in insulated stables. With an outside temperature of 20° F. below zero, the inside temperature of uninsulated stables was found to be between 38° and 44° F., while the lowest inside temperature of the insulated ones was 45° F. Fully insulated stables had more uniform and higher temperatures, but it is questionable whether the cost of complete insulation is justified to provide for the relative short periods of extremely cold weather experienced in this area. Several dairymen made comparative studies on temperatures in extreme cold weather by turning the fan off and observing temperature read-



A through-the-wall air intake for a stable with insulated walls and ceiling. The door covering the top of the intake is used in windy weather to close all but one inch of the opening.

ings; then the fan would be turned on and temperature readings checked. It was noted that the temperature at cow height would



Air intake for over masonry walls.

increase when the fan was started after being off for several hours, indicating that the fan circulates the warm air that accumulates at the ceiling. In one instance, water pipes froze when the fan was off, but did not freeze with the fan running, even though the outside temperature was 5° colder.

Moisture Conditions

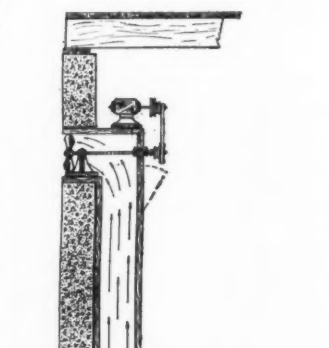
In practically every instance, the motivating incentive for installing a ventilation system was the excessive moisture deposits on the ceilings and walls. In previous winters, some of these stables had as much as one inch of frost on the walls and water dripped from ceilings. In a number of instances, periodic measurements of moisture after the systems were in operation showed a relative humidity range of between 50% and 68%. These measurements did not mean much to the dairymen, but the dry condition of their walls and ceilings was evidence of satisfactory performance. The only place where condensation was noticeable was on single sash windows. This steaming of windows, as it is commonly called, could have been corrected by installing double sash windows. However, the moisture condensation in each case was not considered serious enough to justify the extra cost.

Fresh Air

Oxygen and carbon dioxide contents of the air were not measured, but the satisfaction expressed by the dairymen as to the freshness of the stable environment; also that voiced by members of his household, who noticed a marked reduction in the odors carried by the men's clothing, was their measurement of satisfactory performance of this system in respect to odors. If ever in doubt as to whether the system is removing odors, one only needs stand in front of a fan that is in operation for a few seconds.

Costs

The cost of materials, including hardware cloth (¼" mesh) to cover intake openings, lumber for intake and exhaust flues, insulation for the intake flues, wiring to the motor, nails and complete fan assembly, averaged about two dollars per cow. One of the small installations (12 cows) was made at a cost, exclusive of labor, of $27.07 and one for 25 cows, at a cost of $41.50. The average electrical energy consumption for the installations studied was 2 kw-hr per cow for each month that animals were stabled. An installation can usually be made by the farm hands during periods when other work is slack. An experienced carpenter can install a system for 20 cows in about 2 days.



An improvised belt driven exhaust fan. Up to 30 cows, use ¼ hp. motor; 30 to 40 cows, use ⅓ hp. motor; 40 to 50 cows, use ½ hp. motor. A fan that delivers 60 cu. ft. per min. per cow is required. For example: A 20 cow stable would require a fan rated for 1200 c.f.m.

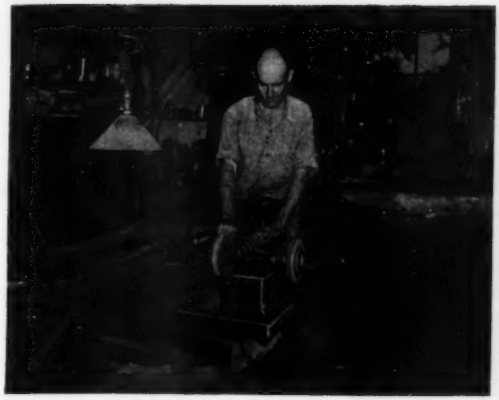
Conclusions

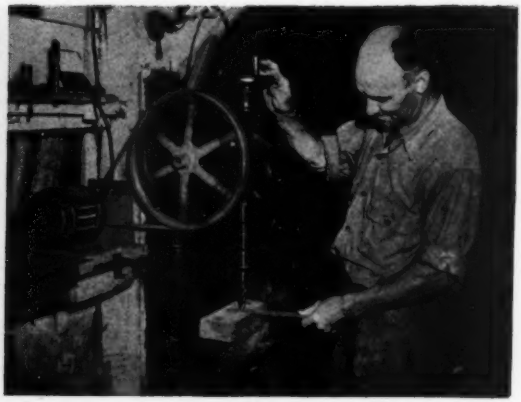
As a result of last winter's satisfactory experiences by users of this system in our territory, 50 additional dairymen are now planning early installations at their farms. Direct drive fan assemblies are now difficult to secure. An improvised belt-driven fan will probably be substituted for the duration. Belt-driven fans are not as attention-free as the direct driven type, but dairymen who are filling their stables to capacity will need ventilation now more than ever, and are willing to give the required attention to this second choice fan. The direct drive fan is powered by an enclosed fan duty motor. This type of motor facilitates mounting the fan on the motor shaft and the complete assembly can be placed in the air stream. Usually the improvised, or belted, exhaust fan is powered by a multi-purpose motor of the open type with sleeve bearings. Consequently, a fan so powered can neither be mounted on the motor shaft nor is it practical to place it in the air stream.

Exhaust Fan and Flue

When a ventilation system is being installed during spare time of farm hands, after the cows are stabled, it is suggested that the exhaust fan be installed first. The fan can either be installed near the floor (15 inches from center of fan to floor) without an exhaust flue, but protected with heavy wire, or it can be placed near the ceiling with a flue that extends to within 15 inches of the floor. The latter, and more desirable method

. . . . . (More on page 24)





Left: A corner of the farm shop showing grinding wheels and circular saw in operation. A grindstone is operated from the same motor by removing the grinder belt and putting on a longer one. **Right:** This power drill speeds up repairs. It is driven by a one-quarter hp. motor. A V pulley is attached to the fly-wheel shaft for driving.

MacNeals Make Electricity Do the Work

Electrified Shop, Year-Around Brooding, Home Feed Grinding and Mixing Save Labor and Make Extra Cash

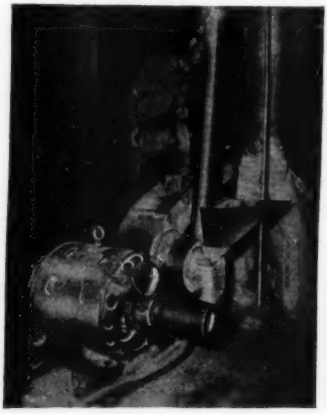
By **STANLEY BIDLACK**
Philadelphia Electric Co.

TYPICAL of farmers who are helping win this war by hard work and good management, are William MacNeal and Sons of Parkersburg, Chester County, Pennsylvania.

The last time I visited this farm, the MacNeal brothers were in the repair shop, shaping up a piece of metal roofing for a new poultry building. They were doing as good a job as a tinsmith and saving the farm money, gasoline and tires, and the tinner's time for war work.

This shop isn't fancy, but it is large and well equipped with about all the tools and materials needed to keep all kinds of farm equipment and several buildings in good shape. Repair work is speeded up by means of a power drill, motor driven grindstone and emery wheels, and a circular saw. The work benches are lighted and a chunk stove supplies heat for cold weather.

The MacNeals specialize in fruit and poultry. They do their own hatching with a couple of all electric incubators. Several years ago two electric brooders were purchased on trial. Now they use five of them in operation almost the entire year around. This is good economics because there is not much in an electric hover to wear out and five brooders used four times a year will do as much work as twenty that are used only once a season. A five-section battery brooder supplements the floor hovers.



This 5 hp. double end motor drives a corn sheller and this hammer mill either separately or both together. Grain may be spouted to the mill from overhead bins.

The feed bill on most eastern farms is an item to reckon with. By using all the grain produced on their farm at home, and purchasing only such supplements as are needed to make well balanced feeding rations, they save $6 to $10 a ton on feed costs, over selling grain and buying a ready mixed feed. This saving, according to E. R. MacNeal, does not include the saving on feed bags, which runs about $1 a ton, and the cost for trucking grain to town and bringing ready mixed feed back. Actually from half to three-quarters of their hauling is saved.

In these times, the saving in rubber and gasoline, to say nothing of railroad transportation, makes a pretty good entry in the war ledger.

MacNeals buy from 400 to 800 pounds of a 32 per cent protein mix, and about 100 pounds of solidified whey per ton of feed. The proportions used depend upon whether they are preparing a laying or a growing mash. The feeding formulas were recommended by one of the large feed

Five electric hovers are in use almost all the year around. These white leghorns are about ready to leave the hover, and will be replaced by a bunch of day old chicks after cleaning and disinfecting the house and hover.

companies. Complete and tested feeding formulas may also be obtained through any county agricultural agent.

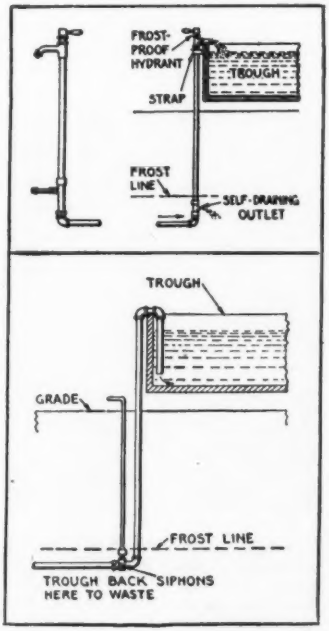
Equipment used for processing the grain is not elaborate or costly. It consists of a corn sheller, a vertical style ½-ton feed mixer, and a hammer mill. The mixer has an individual ¾ hp motor which is mounted on top of the frame. The corn sheller and mill are run by a 5 hp motor and are rigged up so that either machine may be run separately, or both run at the same time. They are run together to shell and elevate corn to an overhead bin in a single operation. The motor shaft extends on both sides of the motor and drives two pulleys. The sheller dumps the corn into the elevating hopper of the mill which blows it into the overhead bin.

The mill is run separately to elevate other grains. Grain is fed back to the mill for grinding by gravity. The grinding operation may be made entirely automatic with ground grain returned to an overhead bin by the elevator blower; or the ground grain may be bagged on the mill floor if desired. Either way, grain is handled with a minimum of attention and labor. With equipment like this, grinding costs are very low. The power bill, for example, will run from one to one and one-half cents a hundred at 2 to 3 cents per kw-hr and average grinding.

The Cover—Frost-Proof Hydrant

Frost will soon be edging into the soil for its winter visit, and exposed pipes will be going frigid. There are several ways of having running water available outside and above ground in winter without having the pipes freeze. One way is shown on the cover. It is a frost-proof hydrant in which the delivery pipe extends above ground but the control valve is located in the piping below frost line. There is also a small weep-hole or waste above the valve but below the frost line which permits the remaining water to drain out of the vertical pipe after the valve is closed and before the pipe has a chance to freeze. The arrangement is simple and effective.

There are correct and incorrect ways of installing hydrants. The upper illustration shows a correct method. The lower one is incorrect. Note that with this lower arrangement the water in the trough would siphon back through the pipe and out of the drain. Under certain conditions, as with the pressure cut off in the mains and with the hydrant valve open and faucets open elsewhere, the tank water might be drawn back into the system. This is called back-siphonage. To prevent it the open ends of faucets and discharge pipes should never be submerged in contaminated water. This is true of any plumbing—not just hydrants.



Electric Lights

Data from the 1940 Census of Housing recently released by the Department of Commerce reveal that more than three-fourths of all dwelling units in the United States have electric lights. Greatest contrast in the proportion of homes with electric lights occurred between rural and urban areas with the former's percentage at 31.3 and the latter's at 92.5. Of the three regions, West, North, South, the West ranked highest, South lowest. Figures show that 13.4% of all farm operators' dwellings were lighted by electricity in 1930, whereas by 1940 the percentage had risen to 31.3%.

Handling Hybrid Seed Corn

By **GEORGE R. HARRISON**
Valparaiso, Indiana

MR. L. Kenyon Wyckoff, Porter county, Indiana, began a few years ago to produce his own hybrid seed corn. Now he grows so much that he must have a modern building for handling it while supplying seed to many of his neighbors. The new building for the processing is electrically operated throughout, with eleven individual motors.

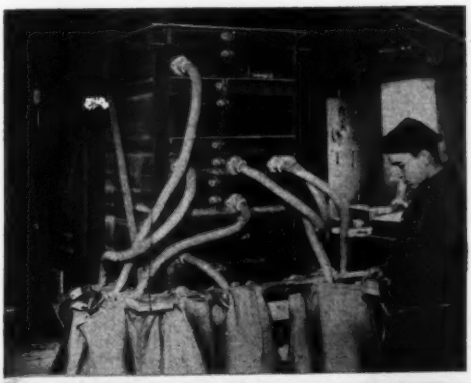
First, the ears must be dried as soon as they are brought from the field. This is done in closed bins through which warm air is blown with a five horsepower motor. Next in order come shelling, cleaning, grading, treating, and sacking.

Between any two operations, the seed must be carried aloft in order to pass it by gravity to the next piece of equipment. So each elevator has its own motor.

Grading this hybrid seed corn is something quite complicated, but, thanks to machinery, it becomes practically automatic. The seed is first fed into an Oliver Vertishake machine which has thirteen different outlets for as many sizes or widths of kernel. One of the pictures shows this machine with its various outlet tubes. Then the corn goes into a Superior grader. This grader sorts the kernels into different lengths. The seed treater now gets its turn, after which the corn goes into bushel sacks for storing away to await use in the fields.

Despite so many motors, highest cost for any month of operation is not more than fifty dollars. But then there are months of light work in the seed house, besides those other times when equipment is idle while Mr. Wyckoff and his men are working with the corn in the fields—fitting, planting, cultivating, detasseling, and harvesting.

Mr. Wyckoff began in a small way with the hybrid seed corn, but he has increased his interest until he now grows fifteen acres of inbred foundation seed besides single cross and regular cross, the latter for his own use and for sale to other farmers.



Upper: This is the motor-driven Vertishake grader which makes a many-grade separation of kernels according to size. **Lower:** This Superior grader sorts the kernels into different lengths.

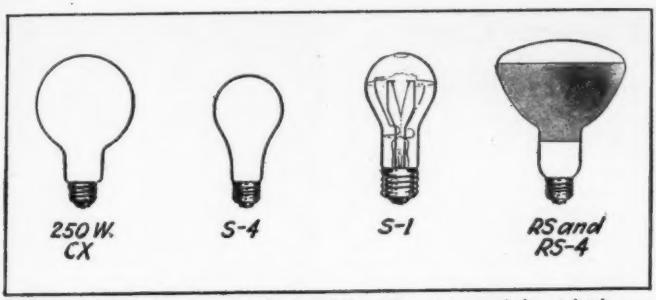
Shelling inbred foundation seed with a converted hand sheller. Note that the V belt runs on the flat face of the sheller fly wheel. A 3 hp. sheller handles the main crop.

A new piece of equipment installed for the season at hand is Keene electrically warmed tester for germination. Thermostatic control gives high efficiency, and the tester attracts much attention as it reposes in the Wyckoff front room of the corn house.

Reversible Milk

In many plants throughout America millions of gallons of milk are being sprayed under pressure into hot chambers from which swirl tons of powdery, dried whole milk. The first shipment of powdered whole milk sent abroad by the Agricultural Marketing Administration is helping to sustain allied soldiers fighting for freedom at Malta.

To "make" a quart of milk that tastes very much like pasteurized milk and has approximately the same food value, all they need to do is to add 4½ ounces of the powdered whole milk to a quart of water.



This shows the relative sizes and shapes of the different types of ultraviolet lamps. RS type lamps have built-in reflectors.

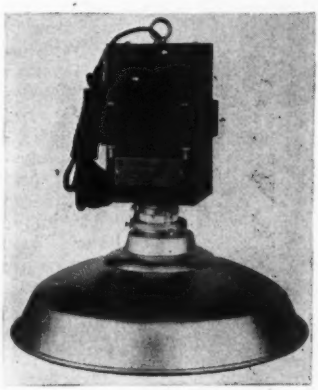
Ultraviolet for Hens and Humans

THERE are several types of ultraviolet lamps available for the irradiation of hens and humans. The same lamps will do for either hens or humans as the same rays are beneficial to both. The difference in the lamps is in the finish and the method of support for convenience in use. Home lamps are usually of the floor or table variety, while stock lamps are made to hang from a hook.

There are different qualities of ultraviolet rays just as there are different qualities of apples: crab apples, sweet apples, sour apples, eating apples, cooking apples. Ultraviolet of short wave length produces ozone; the next longer wave length kills bacteria. Both of these are harmful to animals in large doses. Next comes the beneficial sunlamp range, and then the photographic and fluorescent rays. Most of the lamps produce more than one quality of ultraviolet. In the sun-lamps, the glass bulb is made of a special material which screens out the harmful rays.

In the health range of rays there are lamps known as carbon arcs, mercury arcs (of which the S-1, S-2, S-4, RS-4 and RS lamps are types) and the incandescent CX lamps. Carbon arcs are not used in poultry houses because of the difficulty of keeping them burning steadily and the care they require. CX lamps are being used some for poultry where the lamps are placed close to the birds and where a small amount of ultraviolet will suffice. They are very inefficient producers of ultraviolet. They have the advantage of not requiring transformers or other auxiliaries for use, and they emit much infrared.

An S-4 lamp unit complete with transformer, socket, aluminum reflector and cord. It is made to hang over the feed hopper or water pan. The same unit may be used with an RS-4 lamp without the aluminum reflector.



The group of S lamps are the ones commonly used in the home and the hen house. All of them require specially designed transformers for providing proper starting and operating voltages, with the exception of the new 275 watt RS lamp. The RS lamp has an ordinary medium screw base for use in regular 115 volt lamp sockets. It has the starting mechanism within the lamp itself. With the other S lamps, each one requires its own auxiliary transformer.

The selection of ultraviolet lamps this year will depend first upon their availability. There has been a small stock of S-4 units carried over from last year which are complete with transformer and reflector at under $15. Very few of the RS lamps are to be had. A large demand would soon exhaust the supply of all types, so you had better take care of what you have.

A study of the following table will give you a comparison of the different lamps, their ultraviolet and lumen (visible light) output and costs.

The RS and RS-4 lamps are different in shape from the other S lamps and have their own reflectors on the inside of the glass bulb. These lamps also have a narrower beam than the S lamps, that is the ultraviolet is directed

Comparison of Ultraviolet Lamps

	S-1	S-2	S-4	RS	250wCX	500wCX
Lamp Watts (Rated)	400	130	100	275	250	500
Watts with Auxiliary	500	175	120	...	...	...
Rated Average Life (hours)	400	300	*	*	500	500
Initial Lumens—Approximate	7,200	1,600	3,500	2,500	4,750	10,400
Ultraviolet Output, E-Vitons	68,000	8,000	68,000	30,000	1,360	3,000
Auxiliary Transformer Required	Yes	Yes	Yes	No	No	No
Starting Time to Full Output	5 min.	8 min.	3 min.	3 min.	0	0
Screw Base	Mogul	Special	Special	Medium	Medium	Mogul
Overall Length	6 7/16	4⅞	5⅝	6⅝	6¼	7⅞
List Price—Lamp Only	$4.75	$3.75	$8.50	$15	$1.25	$2.25
Approximate Price—Complete Unit	$20-$60	$18-$35	$12.50-$50	$15-$30	$1.25-$4	$2.25-$7

*The life of these lamps is a function of the number of times they are lighted as well as the total hours burned. It is given as 400 applications which in average poultry use is approximately 1,000 hours.

over a much smaller area and is more intense per unit of area. The RS-4 lamp has all of the characteristics of the S-4, but with a reflecting globe shaped like the RS lamp. It lists at $10. It may be used in place of the S-4 lamp without a reflector.

From experience to date the S-4 or RS-4 lamps seem to give the most ultra-violet at the least cost for operation.

Operating Cost Per Hour For Current and Lamp Renewals

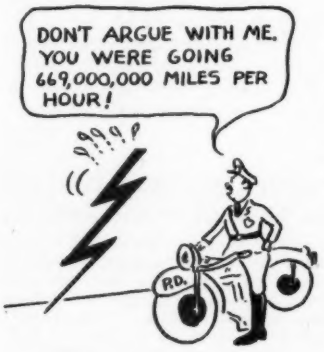
Kwhr. Rate for Current	S-4	RS-4	RS
2 cents.....	$.0092	$.0104	$.0168
3 cents.....	.0104	.0116	.0196
4 cents.....	.0116	.0128	.0223
5 cents.....	.0128	.0140	.0251
6 cents.....	.0140	.0152	.0278

Power As the Crow Flies

Radio talk on WGY Farm Forum, September 25, 1942. By Geo. W. Kable.

RIGHT off, I want you to know that I am going to talk about high-line electric power and not about dive bombers or the need of a separate air service for war. When Emerson asked me to talk about "Power as the Crow Flies," I knew he was thinking about speedy straight line flight of power through the air; and, of course, electricity is the only answer.

But electricity does not fly like a crow. A young crow in fine fettle, with a shotgun behind him, might make fifty miles an hour. While he is flying 100 feet, electricity would wing its way seven times around the earth. It just gets up and "gits." Electricity does travel in straight lines, but it will also make right angle turns at 186,000 miles per second without slowing down. At that speed it does not matter much whether it comes to us straight from the power house or by way of Five Corners. And, "praise be," it doesn't wear out its rubber or waste gas in going at that speed.



Electricity and crows both sit on the tops of poles ready to fly. If the crow flies and does work on your freshly planted corn field, he needs feed to keep up his energy. Electricity is like that, too. If it flies to your granary and does work on the corn in your grinder, there must be a power house some place to feed it. But suppose the crow just sits on the pole and does not fly or scratch for corn. He still needs feed to stay alive—not as much as when he works, but some. That is also true of the electricity on the pole. On every power line a certain amount of "feed" is wasted on the "sitting crow." The more work the electricity does, the less the percentage of this "feed" wasted.

Crows are to be found flying every place in the United States. So is electricity. Electricity *nests* in the war plants. It hatches pure aluminum for airplanes from bauxite—a kind of earthy material; it snatches nitrogen for explosives from the air. It sits on a pile of steel; wheels hum; and from under its wings scamper ships and tanks. In *your* war plant on the farm it milks the cows, cools the milk, hatches your chicks, and lights your hens to winter egg production.

While the crow is a destructive old rascal with a raucous voice, electricity is a great constructive power; yet it sings sweetly through the radio.

Electricity—taken for granted like the crow—is at the same time mysterious and something to marvel at. Darting out from under great dams like Boulder or Keokuk or small ones across Pine Creek, or steaming out of great coal-burning plants near our cities, it is instantly 100 miles away, full grown with 100,000 volts of force behind it. Flying into a "cage" of transformers at a sub-station, this "power crow" comes out as 25-4000 volt "crows" without even slackening its 186,000 miles per second pace. In the same instant the 4000 volt "crows" are split into other 230 and 115 volt "crows," and are at work lighting a city, making a machine gun or keeping your clock timed to a split second.

Farm *field* operations have been made many times more efficient through the application of gas tractor power. But field crops are not the crying need in this war. It's milk, meat and eggs that are wanted at home and abroad. They are the *chore* crops, and electricity is pre-eminently the power for processing feeds, improving products and doing other chores.

If you have high-line service now, you have been either businesslike or lucky. Use it to replace labor, and to increase production. Use it intelligently so as to keep it functioning for you during this critical time when it may

. . . . . (More on page 26)

. . . and from under its wings scamper tanks and ships.

be impossible to replace or to add new wiring and equipment.

There are many ways to put electricity to work on the farm. If you cannot buy new motors, perhaps you can get a used one; or, better still, equip the motors you have with handles, skids or trucks so you can move them about the farm to several different jobs for replacing manpower. There are also a lot of pieces of labor-saving and stock-saving equipment, like pig brooders, which can be improvised at home. Their use will put dollars in your pocket and keep the line "alive" and efficient on the pole.

And for those of you who do not have high-line service—you'll have to make the best of it until **after the war. Buy War Bonds** now. They will help win the war, and you will have money in Uncle Sam's bank when power lines and equipment again become available. This is a good time to *plan* the use of electricity and how to get the most out of your investment in it.

This "crow talk" may help fix some points in your mind about "flying" high-line service. Electricity does fly—but it's no crow.

Not Coming?

You won't be coming
home this week?
Oh well, we'll get along
all right—
The sun by day will give
its light,
The little stars will shine
at night—
(But not so bright!)

You won't be coming
home, you say?
Oh well, we'll get along
some way—
The little birds will sing
all day,
The world will not be
glum nor gray—
(But not so gay!)

You won't be coming up
tonight?
Alone I'll hear the
cricket's tune—
Alone I'll greet the ris-
ing moon—
Rejoicing that you're
coming soon—
(Can't be too soon!)

(MRS.) RUBY M. DROGSETH,
Woodstock, N. Y.

Ten women of Yazoo City, Miss., bought a 400-egg electric incubator for $60. Charging themselves 3 cents an egg for service, the group saved $53 the first year. *U.S.D.A. Clip Sheet.*

Water Warmers

Winter is approaching; and with winter comes the bugaboo of early morning ice on poultry drinking pans and ice covered stock tanks. With modern equipment, the winter stock watering problem need not be too distressing.

There are three methods of assuring good drinkable water for stock in freezing weather. One is to supply the water in a well ventilated building which is warm enough so pipes and watering places will not freeze. Drinking cups in dairy barns where cows are kept, answer this specification. In addition to having water which is not frozen, the fact of having it always available to the cows insures the best condition for high milk production.

The second method of keeping water available for stock under all but the severest weather conditions is to keep it flowing. If water is kept flowing, there must be provision for carrying away the excess water so as not to create muddy or icy places at the

Super Brood Hen

The cartoon and statements below are from material being sent to farmers of New Hampshire by Joe Bodwell. Mr. Bodwell has been a poultryman for a good part of his life. Hens helped him through college. He is now Rural Sales Supervisor of the Public Service Company of New Hampshire.

"1—Electric brooding keeps correct temperature under the hover at all times, under all weather conditions, with much less attention than any other type.

"2—Fire hazard is reduced practically to zero, eliminating the most dangerous "saboteur" that we have today.

"3—It uses fuel now being automatically delivered to your home and farm, with no transportation problem.

"4—It operates more economically than any other type. Electricity has not advanced, in the face of rising costs."

TWENTY-FIVE TIMES AS GOOD AS THE BEST MOTHER HEN...

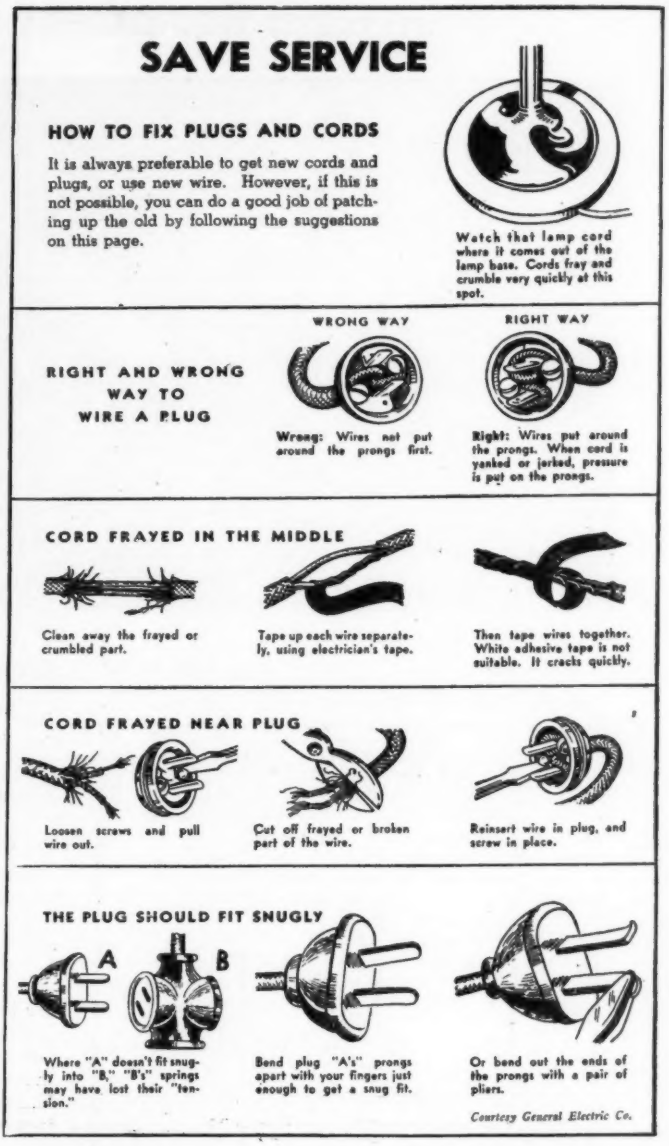
A good brooding hen cares for twelve chicks and cackles herself proud. An electric brooder takes up to 300 chicks and more nearly duplicates the mother's care than any other brooder. There is no flame to burn up moisture in the air or harm the chicks . . . and we've even added a substitute for the cackle in the form of an attraction light that invites the chicks to come in under the hover where it is warm.

watering trough or around the buildings. Keeping a pump running to prevent the water from freezing may seem an extravagance. In very cold climates, or with deep well pumps or unusually high power rates, it might be. With a one-quarter horsepower motor driving a shallow well pump, the maximum power consumption would be about 8 kw-hrs in 24 hours of continuous running at full load. It would seldom be necessary to operate the pump continuously or even every day. It would be more likely to average under 2 kw-hrs per day. To utilize running water, the drinking trough must be kept small so the water will keep moving through it. It should also be in a protected place.

The third means is to use tank heaters. Electric heaters are most convenient and satisfactory as they may be automatic and self-regulating. A limited number of poultry water warmers with thermostatic control will be available this winter. They are reasonably priced and not expensive to use. Home-made heaters may also be improvised from lamps housed beneath the drinking pans.

It is hardly advisable to attempt the heating of large, exposed stock tanks with electricity. Some farmers do it by insulating the tanks and using covers, but it is a wasteful use of electricity. It is much better to provide smaller tanks with float control, where running water is available. Where there is no running water, one would hardly expect electricity to be available for tank heating. Electric heaters may be used in large tanks by placing a headless barrel, or a box open at top and bottom, around the heater, raising the box or barrel an inch or two so water can flow in from the bottom. The large tank is then used as a reservoir and the heat is applied inside the barrel which provides a place for stock to drink. Several commercial heaters which may be used in this manner are available.

Keeping good drinking water before the hens and cows in cold weather may be considered a war production measure as experience has shown that it will save labor and increase milk and egg production.


SAVE SERVICE
HOW TO FIX PLUGS AND CORDS
It is always preferable to get new cords and plugs, or use new wire. However, if this is not possible, you can do a good job of patching up the old by following the suggestions on this page.
Watch that lamp cord where it comes out of the lamp base. Cords fray and crumble very quickly at this spot.
RIGHT AND WRONG WAY TO WIRE A PLUG
WRONG WAY
RIGHT WAY
Wrong: Wires not put around the prongs first.
Right: Wires put around the prongs. When cord is yanked or jerked, pressure is put on the prongs.
CORD FRAYED IN THE MIDDLE
Clean away the frayed or crumbled part.
Tape up each wire separately, using electrician's tape.
Then tape wires together. White adhesive tape is not suitable. It cracks quickly.
CORD FRAYED NEAR PLUG
Loosen screws and pull wire out.
Cut off frayed or broken part of the wire.
Reinsert wire in plug, and screw in place.
THE PLUG SHOULD FIT SNUGLY
A
B
Where "A" doesn't fit snugly into "B," "B's" springs may have lost their "tension."
Bend plug "A's" prongs apart with your fingers just enough to get a snug fit.
Or bend out the ends of the prongs with a pair of pliers.
Courtesy General Electric Co.

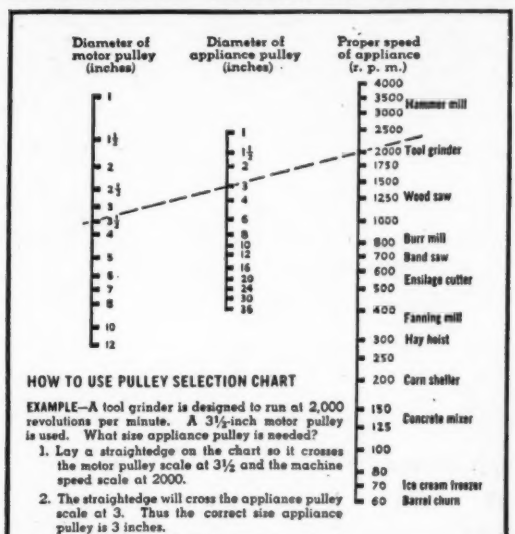
Fire Truck Saves New Hay

Alamosa, Colorado—Quick and efficient acting by the *rural fire department* saved many tons of hay from being destroyed by fire the other night on the ranch of Former Governor William H. Adams. Twenty-five tons of new hay caught fire. Water was drawn from Rock creek through 850 feet of hose to extinguish the blaze.

Recent experimental work shows that 400 gallons of blood passes through the udder for every gallon of milk a cow produces. Multiply this by the day's yield and the immense amount of work a cow's heart does to fill her share of the nation's milk bottles is apparent.

Your Farm Equipment may have to last fo

PULLEY SELECTION CHART FOR USE WITH ELECTRIC MOTOR RUNNING AT 1750 R. P. M.



HOW TO USE PULLEY SELECTION CHART

EXAMPLE—A tool grinder is designed to run at 2,000 revolutions per minute. A 3½-inch motor pulley is used. What size appliance pulley is needed?

1. Lay a straightedge on the chart so it crosses the motor pulley scale at 3½ and the machine speed scale at 2000.
2. The straightedge will cross the appliance pulley scale at 3. Thus the correct size appliance pulley is 3 inches.

On the other hand, if the appliance pulley is a fixed size, say 4 inches, then follow the same method to determine the correct motor pulley size.

Adapted from Georgia Farm Bulletin 467

Since it will be difficult to replace farm equipment for the duration, it's up to American farmers *to take the best possible care of their tools of food production.*

By doing this, you not only help conserve critical war materials . . . you assure an uninterrupted supply of vitally important foodstuffs to our fighting forces.

Here are practical pointers which will help you add years to the life of your electric motor . . . and make your farm equipment last longer and do more work.

• • •

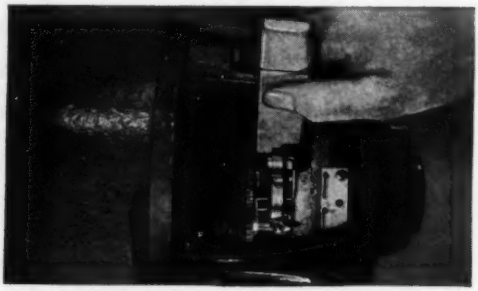
For longer life and greater production, your farm equipment should be inspected regularly and kept in the best possible condition. Knives should be kept sharp and properly adjusted. Shafts should be correctly aligned and bearings well lubricated.

Proper operating speeds are important . . . for excessive speed is not only dangerous, but wastes power and may destroy the machine. This can be avoided by proper selection of pulleys, as explained in the chart at the left. Manufacturers' recommendations for machine and belt speeds should be carefully followed at all times.

★ WARTIME STRATEGY ON THE FARM ★

...for the duration . . . take good care of it!

Lubricate correctly . . . Use lubricants *sparingly*. Avoid overoiling, as this may injure insulation. Do not oil bearings while motor is running. Wipe off spilled oil. Inspect oil supply regularly and keep to proper level. Check ball bearings once a year . . . housing should be kept one third to one half full of special ball-bearing grease. ***Never use ordinary cup grease.***



Keep commutators clean . . . If brushes spark, commutators may be worn or dirty. Clean by gently pressing 2/0 sandpaper, attached to stick, against commutator while motor is running. This will polish commutator bars and improve brush contact. ***Never use emery cloth.*** If commutator is worn in ridges or out of round, have armature removed and commutator turned down by experienced repair man.

Protect motor windings . . . Dirt in windings restricts ventilation and ability of motor to cool itself. Clean motor windings occasionally with vacuum cleaner or air hose. Proper location or shielding of motors will help keep them clean and dry . . . make them last longer and give better service. Totally enclosed motors should be used where excessive moisture, hazardous dust, or explosive vapors are present.

Avoid overloading motor . . . Heat caused by *excessive* or *continuous* overload may destroy motor windings and bearings. *Temporary* overload will do no harm if motor is allowed to cool off during normal operation. Overload protective devices should be added if not built into motor. Motors should be carefully applied to job. Often the motor load may be reduced satisfactorily by changing pulleys.

Westinghouse

ELECTRICAL PARTNER OF AGRICULTURE

Westinghouse Electric & Manufacturing Co., Pittsburgh, Pa.

FREE LITERATURE!

● We will be glad to send you a *free* booklet, "FARM MOTORS", which gives valuable information on the selection, care, and use of electric motors. We will also send any of 12 *free* Farm Bulletins describing the wartime use of electricity on the farm. Just check the ones you want and mail the coupon, *now*.

WESTINGHOUSE ELECTRIC & MFG. CO., Room 1410,
306 Fourth Avenue, Pittsburgh, Pa. (Dept. EF-112).

Please send me the *free* copy of "Farm Motors" booklet ( ) . . . also free Farm Bulletins on the application of electricity to the subjects checked below.

☐ Beef Cattle ☐ Cooking, Canning, and Preservation of Food ☐ Clothing
☐ Crops ☐ Dairy Cattle ☐ Handicraft ☐ Home Improvement ☐ Poultry
☐ Rural Electrification ☐ Sheep ☐ Swine ☐ Truck Gardening

Name.....

Address.....

Electric Scalders for Hens and Turkeys

By R. U. BLASINGAME

MR. ELLIS PETERS of Portmatilda, Pa., R. D. No. 1, says: "I am interested in producing only quality products on my farm. The competition is too keen in mediocre milk, eggs and poultry." Mr. Peters means what he says, proof being that he tops the market with all of these items.

In the Peters plant, electricity operates the incubator, brooders, ventilators, lights and water system and cools the eggs and protects pipes from freezing.

Mr. Peters had a difficulty, however. "I didn't seem to be able to control the temperature of the scalding water when I dressed poultry. Too often the fowls had dark spots and torn skin. The housewife didn't like that and I found myself selling for whatever I could get." The remedy was in an electric scalder. This scalder consists of two cylinders; one 19 inches across and 30 inches high, the smaller one 15 inches across by 25 inches deep. The smaller cylinder fits into the larger and they are separated by glass wool insulation. The scalder is heated by a 1500 watt electric unit taken from an Electro-pail, which is very satisfactory for the purpose. A thermostat is used to hold the temperature at 128° F or 132° F, depending on the setting for young or older birds. These are the semi-scald temperatures recommended in Circular 168, Pennsylvania State College (State College, Pa.). If the current should be left on by mistake with no water in the scalder, the heater plug kicks out automatically.

Above: This scalder was made for Mr. Ellis Peters by a local tinsmith. It consists of two galvanized iron cylinders separated with glasswool insulation and heated by an electric element taken from an Electro-pail.

Mr. Peters says: "I fill the scalder with about one foot of preheated water; let it come up to the proper temperature, and dip the birds for about one-half minute. Since using this device I have always topped the market with my dressed poultry and can't supply the demand."

Turkey Scalder from Milk Cooler

Mr. Carl A. Sager at Mockeyville, Pa., kind'a grew into the turkey business about a decade ago. He began by growing 300 turkeys. This year he has around 2500. As a rule Mr. Sager has three flocks of turkeys hatched April 1, May 15 and June 25. "For three years I used the old type brooders, but they were unreliable. Now I use electric brooders with fine success and I save considerable feed cost by using an electric feed mixer."

Right: Mr. Carl A. Sager dressing turkeys with the aid of an electric scalder improvised from a made-over milk cooler. It has a 3,000-watt heating element and a thermostat for controlling the temperature.

Mr. Sager had somewhat the same experience as Mr. Peters in dressing birds; dark spots and torn skin brought low prices. Then an electric scalder was made of an old 4-can insulated milk cooler cabinet. To reduce the size of the cabinet, a metal partition was put in. This made a scalding tank 2½ ft. deep, 3 ft. long and and 1½ ft. wide. The thermostat and the 3000-watt heating element are mounted through the metal partition. Rubber washers on both sides made of an old inner tube prevent leakage.

During the rush seasons, Thanksgiving and Christmas, 250 to 300 turkeys are scalded per day. The water is heated in a kettle and the thermostat and heater in the scalder holds it at the proper temperature. The water is changed in the scalder at noon and night.

Reclaim Chick Boxes

Owing to a shortage of the cardboard boxes used in shipping baby chicks, these boxes are being returned to the hatcheries for repeated use. The boxes are frequently contaminated by adult poultry or the chicks themselves. Although there is no disinfection that will make the practice entirely safe, carefully painting the insides of the boxes with water glass (sodium silicate solution) will reduce the danger of infection. The box should first be scraped with a wire brush or steel wool to remove foreign material; next the inside is painted with equal parts of water glass and water; and lastly, the box is allowed to dry for at least a day before using. This treatment does not weaken the boxes nor affect the feet of the chicks shipped in them.—Ernest C. McCulloch and Steward A. Fuller, Washington State College. *Journal of American Veterinary Medical Association.*

What I Can Do For War

By MRS. J. LITTLETON BAKER
Midlothian, Texas

SHORTLY after America entered the war, the following headlines appeared over an editorial in my local newspaper:

SHAME UPON YOU, FATHERS AND MOTHERS

Then the editor went on to say, in part, that one man in every three was physically unfit to serve at the front in the U. S. Army during the the first World War. Then asked: "What does all this mean?" He pointed out that most parents were failing in their first duty to their children by not training them to eat or not even providing the right kind of food. Children get such a bad start during the first few years of their lives that they begin life with a handicap they are never able to outlive. "Children," he said, "do not do their learning with their teacher's brains, but with their own, and undernourished bodies simply cannot have well-nourished brains." Then he ended by asking, "Parents, if your method of raising your children is all right, why don't you practice it on your pigs and chickens? . . . Are you more interested in dumb animals than in your own flesh and blood? Shame upon you."

Garden Freshness for Winter Dinners

As I read this editorial it was cold outside, not a particle of green in sight, but for dinner that day we had fresh beets, carrots, lettuce, green peppers, green onions, radishes and rutabagas from our own 6 x 20 foot electrically heated hotbed.

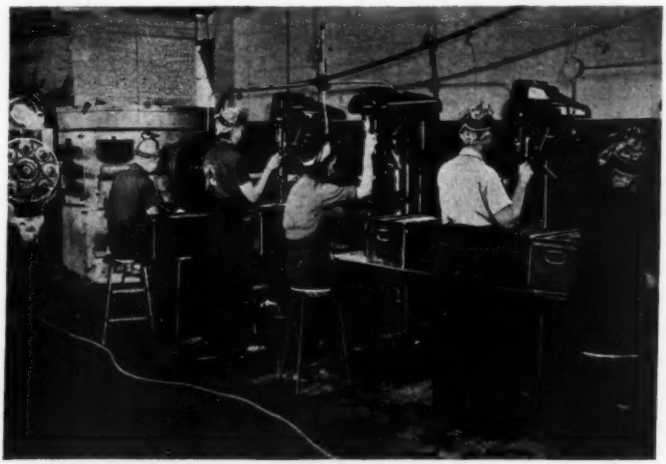
Knowing that there was a lot of truth in the above editorial, and also knowing that underweight, bad teeth, nervousness, anemia, lack of energy, hollow chest, susceptibility to colds, influenza, tuberculosis—all these evils and others as well, are direct results of undernourishment, I asked myself, "What can I do as a special service to my community, home, and national defense?"

Next day I visited with several fathers and mothers in my community who promised to be at our school house next Friday afternoon to organize a "Be Strong Club" and "A Garden and Canning Club." The "Be Strong Club" is a part of the work of our local Dixie Guards. When a boy or girl joins they fill out a blank, giving their weight, age and height, and each member promises to grow or help grow a vegetable garden.

I now have 26 club members who meet at my home twice a month where members exchange seeds, plants, ideas, and experiences, and I give prizes of garden seeds and vegetable plants from my electric heated hotbed for best letters on "Why I Plant a Garden"; "How I Plant a Garden" and "What I have Gained or Obtained from My Garden." Here are some of the answers, in part, received so far: "From my garden we have obtained happiness, health, food, imagination and character." "Adults and children alike need the rich vitamins and minerals from the garden." "It is my greatest pleasure to see the tiny, green plants grow into silver dollars with but a few hours work." "The food obtained from a garden is essential." "It is the pure, ripened products of the garden that builds bodies strong enough to combat disease and other weaknesses." "From my garden I have gained an independent spirit in knowing that I am helping in both home and national defense and also in keeping down family expenses."

Hotbeds Start the Plants

Each member planned and worked out a garden table on paper, so that in their open garden, provisions are made for successive sowing of quick-maturing crops, so that as one crop goes by another is coming on to take its place. Most vegetables are given an early start in hotbeds, and then transferred to open ground as soon as it's safe to put them out. Some members do not have a hotbed, however, and to these I have . . . . . (More on page 36)



Iowa Farm a War Factory—Most farms are war factories turning out food. Here's one that is not making food. Ed. Sundholm is president of the Superior Manufacturing Co. of Albert City, Iowa. He was developing a dairy farm on which he expected to have a herd of purebred Brown Swiss. Then he started getting war contracts. His factory in town could not handle them all, so he put machinery in the buildings on the farm and is making parts for death dealing weapons. Soon he expects to be working three 8-hour shifts a day. Most of the "hands" are women. After the war, the Brown Swiss will have their turn.

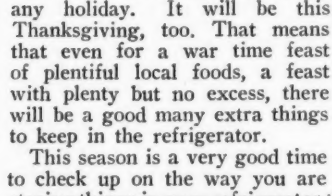
Electrical Housekeeping

Edited by **GAIL MEREDITH**

Thanksgiving Dinner in the Refrigerator

GETTING dinner the day before is standard practice for any holiday. It will be this Thanksgiving, too. That means that even for a war time feast of plentiful local foods, a feast with plenty but no excess, there will be a good many extra things to keep in the refrigerator.

This season is a very good time to check up on the way you are storing things in your refrigerator.



You know, though maybe you do not always act on this knowledge, that different kinds of food need different kinds of cold. The lettuce and parsley, the spinach and other fresh vegetables you may have brought from town need a mild cold with a good deal of moisture in the air around them. The covered porcelain drawer or dishes on the bottom of the cabinet is the place for them. That is a good place to chill oranges and grapefruit, too, but if you are lucky enough to have a few bananas, keep them out of the refrigerator entirely. They do not need cold.

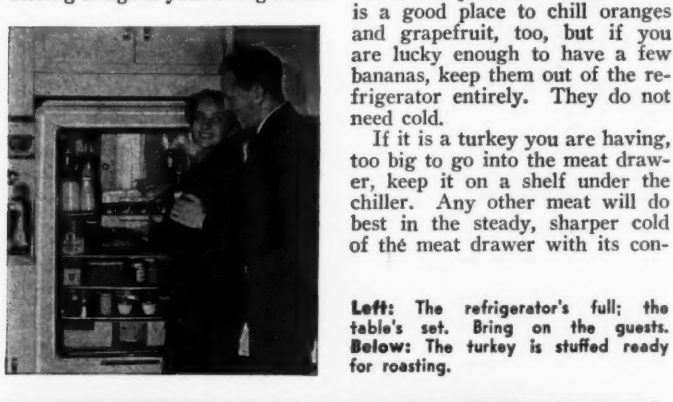
If it is a turkey you are having, too big to go into the meat drawer, keep it on a shelf under the chiller. Any other meat will do best in the steady, sharper cold of the meat drawer with its controlled humidity. If you haven't one, use the space close to, and below, the chiller.

The second shelf from the bottom, along about the middle of the cabinet, is a good place for the molded salad you have ready for dinner or a fancy pudding you've whipped up to eat with the cold turkey at night. If it is a frozen dessert, it will have to stay in its tray in the chiller until you are ready to use it. Any frozen foods from your locker must be kept on a refrigerated shelf in the chiller until you are ready to prepare them.

You do not have to do a single thing to insure the right cold for the different kinds of food you store. It is there already. The mechanism of your refrigerator provides it. You just have to see that the food is put in the cold it needs.

After you've cooked the giblets and made an extra supply of white sauce, when the soup is made and ready to store until time for reheating, keep them out of the refrigerator until they are cold. Steaming hot foods would increase the operating time of the mechanism. So will careless arrangement of the dishes you use. Store one on top of the other if you can, and need to, covering most foods unless your refrigerator has a specially designed cabinet for keeping them uncovered—but place them so one dish does not crowd another. Leave space for a steady up and down flow of air throughout the cabinet. That will be easier on the refrigerator and will make a difference in the amount of electricity you use for cooling.

Left: The refrigerator's full; the table's set. Bring on the guests. Below: The turkey is stuffed ready for roasting.



Correction:

The partition in the Omer Lyons bathroom (p. 21 October issue) was of plasterboard—not pasteboard. Ed.

Well I Snum!

An Actual Experience at a Red Cross Sewing Day Luncheon in Vermont. Electricity Gets the Lunch and Washes the Dishes.

By **LILLIAN McGILL**
Home Service Specialist, Twin State Gas & Elec. Co., St. Johnsbury, Vt.

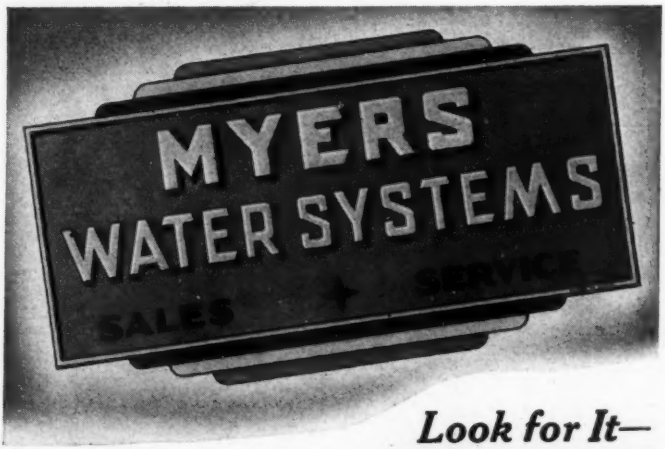
"——Good morning, Mrs. McGill. Well, here I am, but I'm afraid I wont be much help. Our president asked me to serve on the luncheon committee today, but I haven't the least idea what I'm supposed to do. She said you'd be here and show me all about it and I sure am thankful you've come. I've been looking around a bit while I was waiting for you and everyone seems to be enjoying their work, sewing. Do they get fairly good pay? How long are the hours? Where do they go for lunch? What's that? We serve it right here from this kitchen? Do you call this a kitchen? Well, I never! I should call it some performer's platform. I can't see much likeness to a kitchen, not to my kitchen, at least. But I suppose you know what to do; they tell me you do.

Teakettle on a Box?

"Yes, I'll fill the tea-kettle; but where are you going to put it to heat, not having any stove. My goodness, you don't mean to tell me that metal box with drawers in it will heat water. Got an oven, too! Did you ever use it? But say, have you noticed the time? It's eleven o'clock and we are supposed to have this luncheon served at twelve, they tell me. Do you think we can make it? I've heard tell electricity is powerful slow, but I suppose you know how to plan it. I do hope we can get things on time. I came at ten o'clock to make sure.

"The dishes are in the cupboard? My goodness, these are fancy dishes and the cupboard all dolled up! Haven't you got any every-day dishes? I'd be afraid to use these reg'lar. You like pretty dishes? So do I. I've got a few, but I don't use them, but here goes. You've got enough here to serve a regiment. Silver and glass, too! My, I'm glad I come. What's next? Put some flowers on the table. Well, I never! That's usually the way at parties. You'd think people eat with their eyes! Well, this sure is a queer place, but so far I like it. Come quick! The kettles are boiling furiously and look at the time—only 11:20 and this water'll be cold before we can use it. What's that? You can turn the heat down. Well, that sure is lucky. Where's your coffee pot? You use this percolator? My goodness, it sure is good looking. I do hope it makes good coffee.

"I'd ought to have brought a towel to wipe my hands on. I never thought of that. You have paper towels? Well, well, just wait till I tell Mary that. I've used paper napkins quite a while back for extras, but I've never come up against paper towels. They are a might stiff, I would say, but I can manage for once, but I do hope you've got some real towels for the dishes. Hadn't we better heat an extra kettle of water for dishes? You have plenty of hot water in the tank? I don't see no tank, but I suppose you've got



Look for It—

the Sign of a COMPETENT PUMP MAN!

Where you find this sign you'll find a pump man who knows pumps, water systems and well equipment from the inside out — an experienced Myers dealer who's willing and able to give you complete, expert repair service at reasonable cost.

To keep your water service equipment in efficient operating condition is a wartime necessity. In case of trouble, have your equipment (regardless of make) checked by your nearest Myers dealer. Look for the MYERS sign.

MYERS
WATER SYSTEMS

THE
F. E. MYERS & BRO. CO.
1130 Fourth Street
Ashland, Ohio

that in a box, too, somewhere around. I guessed right, didn't I? Does look more like a box than a water tank to me. Well, it's a handy thing to have . I have to heat all the water I use in kettles. I do wish I had a reservoir. I hope it doesn't cost you too much to run that water box.

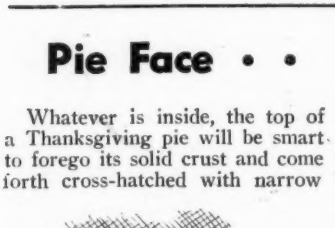
"Well, we've got that luncheon served on time and I sure never seen it done so easy, water hot and coffee made before you know it and everything right handy. It's good coffee, too. I was a little afraid you didn't give it quite enough time.

Now give me the dishpan if you've got such a thing and I'll get busy with these dishes. You are going to wash them in the dish-washer! Well, I never! How do you think you're going to do that? Where do you put the dish cloth? I can't believe you will get them very clean without using a cloth. A little good scrubbing is my method. You'll show me? Well, maybe you can, but turning of a few buttons doesn't sound to me much like dish-washing. Well, I snum! They are washed clean and well rinsed, and I'll dry them and put them away and I'll believe anything you tell me after this. Why, they are dry! Somehow I don't feel quite as afraid of electricity as I did. 'Taint so skeery, after all.

"If the president wants a volunteer again, it's going to be me. I might even come up and try my luck at sewing for the sake of seeing these things work again."

Pie Face • •

Whatever is inside, the top of a Thanksgiving pie will be smart to forego its solid crust and come forth cross-hatched with narrow



lattice work, or decorated with a ring of cut out pastry turkeys strutting one behind the other around the top.

Wives with a mind to finding out such things have doubtless already discovered that it is really possible to make a pumpkin pie that will make holiday history without ever unscrewing the cover of the sugar can at all.

Is there a can of condensed milk in the house? The sweetened kind? If there is, here is a recipe to try.

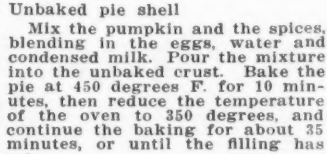
Make your pie crust as usual; chill the dough in the refrigerator until it is thoroughly cold before you roll it out, and then chill the crust again after it is fitted into the tin. This recipe makes filling for a fat nine-inch pie.

1 cup steamed, strained pumpkin, mashed
½ tsp. salt — ½ tsp. cloves
1 tsp. ginger — 2 tsp. cinnamon
3 eggs, slightly beaten
1½ cups, a 15-oz. can of condensed milk
1 cup water

Unbaked pie shell

Mix the pumpkin and the spices, blending in the eggs, water and condensed milk. Pour the mixture into the unbaked crust. Bake the pie at 450 degrees F. for 10 minutes, then reduce the temperature of the oven to 350 degrees, and continue the baking for about 35 minutes, or until the filling has set.

How would you feel about having your pumpkin and mince pies together? I heard about a woman the other day who serves hers that way. It might be a solution



for the folks who just can't decide which kind they want.

She makes this pie by covering the bottom of the pie crust with mince meat prepared as she would fix it for mince pie. Then she simply pours the pumpkin mixture on top, baking the pie as she would if it were all pumpkin. Adding the mince meat stretches the filling so it will make two eight-inch pies.

Lost Light

Even with clocks ticking away on war time schedule, darkness settles in early these days. No legislative decree can keep the sun shining on our part of the world long enough to see us through a day's work. We still have to piece out the day with the best light we can get.

The children will bring back their home work, and mending baskets will overflow with socks to be darned during the long evenings ahead. That means a need to check over the lighting throughout the house to make sure it is ample and under control.

The first and obvious step is making sure that you have the right sized bulbs in different lamps and fixtures throughout the house. The lighting expert from your power company can help you with that, and she does it at no expense to you. The next is to see that you can make effective use of all the light you pay for.

Light Walls Better

This may mean taking a can of paint and climbing up on a step-ladder to repaint a ceiling or two this very fall. Remember that the darker the paint on your walls and ceilings the more light you'll need for seeing. Light colored walls reflect the light back into the room while the dark colors absorb it.

Remember, too, that the finish on both walls and ceilings should be dull if you are to have comfortable light to see by. Glossy surfaces send the light back into your eyes. That's glare.

You can't see comfortably when the light you have glares; nor when it comes from an unshaded bulb, or when it is reflected from the glossy paper of a magazine or even a shiny topped table or desk.

There are other and easier

ways of catching lost light than by repainting ceilings. By just moving a lamp twelve to sixteen inches nearer the pages of a book, you may increase the light on that book as much as 50 per cent.

Place the Lamps Properly

It is a definite part of your job, then, like planning adequate meals, to make sure that your lamps are placed where they will shed plenty of light on the jobs under way. Often two or more members of the family can use the same lamp if the furniture is arranged conveniently.

Do not let the children get too far away from the light when they are studying, and be sure to move the lamp after the chair if your husband moves the chair when he sits down to read. Light experts suggest that the lamp be placed beside and slightly to the rear of lounge chairs and davenport.

You may be losing light through dark shades. Or through shades whose white linings have turned yellow with years. Clean shades regularly with vacuum cleaner or brush. Even light colored silk shades let more light through if brushed every week. Unless you've had a look at them lately, you may be surprised how much dust reflector bowls and lamp bulbs can gather.

Dirt Reduces Light One-Fifth

They do say that the dust that collects in and on them in from one to three months can rob you of as much as one-fifth of the light you are buying, the light your bulbs would give, and your eyes need.

The glass and plastic bowls can go right into the dishpan to be washed shining clean, but the bulbs themselves must be wiped carefully with a damp cloth and dried thoroughly.

Just a little soap and water, just a few minutes with a brush or the vac, just a little more care in placing a lamp where its light will shine on the work in hand, will help you recapture lost light at your house.

Whether you read or sew or study, make sure that there is enough light to make seeing easy, but don't waste it. Don't leave lamps burning unnecessarily, nor carelessly lose the light they give.

We Like An Electric Water Heater

(August Contest Winner)

Our electric water heater has certainly revolutionized housekeeping for me.

Before installing it, washday used to be the hardest day of the week. I washed in our tankhouse which is at least 100 ft. from our back door, and heated water in a boiler on an old kitchen range. The range had a water front with tank attached, so there was always plenty of hot water, but it took from one and a half to two hours to get the water hot enough. And I always had to make so many trips back and forth to stoke the fire and carry out the clothes that I was always tired out before the washing was done.

Now my washing is generally done by the time I got started before. We have moved our washing machine and laundry tray to our service porch since installing the heater, and now all I have to do is turn on the faucet to fill the machine. No more lifting and

SAVE with this VICTORY RECIPE by
Sunbeam
AUTOMATIC MIXMASTER
THE BEST FOOD MIXER MADE
Sunbeam BROWN BREAD
Delicious . . . nutritious . . . and NO SUGAR required
A modern, easy-to-make Mixmaster version of an old favorite. The combinations of flours and bran give this Brown Bread a delicious flavor, and the whole grains used make it a delicious every-day bread. A snap to make, too.
• INGREDIENTS:—1 c. whole wheat flour, 2 c. all-purpose flour, 1 c. baked bran, 1½ tsp. soda, 1 tsp. baking powder, 2 tsp. salt, ¾ c. dark corn syrup, 1 tbsp. salad oil, 2 c. buttermilk.
• METHOD:—Mix dry ingredients in large Mixmaster bowl at No. 2 speed. Add other ingredients, and mix (still at No. 2) until well combined. Pour into a greased loaf pan about 9x5" and let stand 1 hour. Bake in a moderate oven of 350° F. for about 1 hour. Makes 1 loaf.
MIXMASTER SAVES MY TIME, ENERGY FOR RED CROSS WORK
MIXES
MASHES
WHIPS
BEATS
STIRS
BLENDS
JUICES
FOLDS
CREAMS
"Dial" YOUR FAVORITE RECIPE
Only Mixmaster has the exclusive MIX-FINDER Dial on which all the everyday mixing needs are plainly indicated. You simply "tune in" the recipe. And you know the results will have that "success secret" of delicious food—even, scientific mixing. Higher, lighter, velvety-textured cakes . . . creamy-fluff mashed potatoes . . . smooth-as-silk icings, sauces . . . more juice from the same oranges. No end to the time, armwork and money it saves.
CHICAGO FLEXIBLE SHAFT CO.
5600 W. Roosevelt Rd., Dept. 30, Chicago
Canada Factory, 321 Weston Rd. So., Toronto
Over Half a Century Making Quality Products
Famous for Sunbeam TOASTER, IRONMASTER, COFFEEMASTER, SHAVEMASTER, etc.

carrying to get the water from the boiler to the machine.

Washday is generally ironing day too now, for with plenty of hot water always ready our big washing is out on the line in two hours or less.

Dish-washing can also be done in far less time. There is no more waiting for water to heat, so when I am cooking I wash the dishes as they are dirtied and do not let them accumulate. After the meal is over it is only a few minutes work to wash up the dishes used on the table.

No longer do we have to carry water for baths up our long hall from kitchen to bathroom. Just turn the faucet and there is always plenty of hot water for bathing, shampoos, shaving, washing out "undies," or a dozen and one other things during the day.

Meals can also be prepared in far less time. It used to be that our Sunday dinner was always very late. By having the vegetables ready before church, and putting them on in hot water, always ready in the heater, they cook in less time, and are done when the rest of the meal is ready to serve.

I certainly would not take a great deal for our electric water heater for it has cut down my work in a dozen different ways.

Miss Eva M. Denton,
R. 1, Box 41, Woodlake, Calif.

So Much for Grease

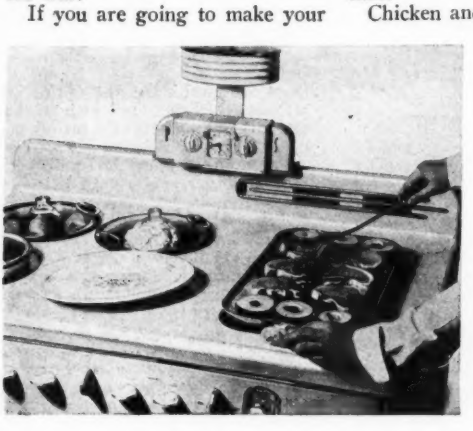
It wouldn't seem that it needed a war to teach housewives to save fats from frying pans, broilers, and roasters to use again in cooking. Thousands of us have always done it. Yet somebody has been so careless with grease that there have been two billion pounds of cooking fats wasted in American kitchens every year. Slipping out of sight down the drain or collecting in widening rings in pails of garbage.

There is no use in anybody's pointing a finger at anyone else. This is no time to find out who has been wasting valuable fat. There is just one thing we can do and that is make sure that not a single spoonful goes to waste in our kitchens. That is a job that will last, they tell us, throughout the war.

If you are going to make your saving by setting extra grease aside for your own cooking, well and good. The more you save, the less you will have to buy and the more will be left for war uses; the more money there'll be for war stamps, too.

Some folks do their saving with a sigh. Should you be one of these, you may find that you will enjoy using this salvaged grease a little more, and you may get a little better results with it, if you will keep a small jar for each different kind of fat. Bacon grease can go right back in the skillet for frying liver, eggs and meats. Its flavor is good on vegetables and wilted lettuce. You can use it for shortening, half bacon grease and half butter for brownies, gingerbread, and spice cake.

Chicken and duck fat make fine shortening and flavoring, too, while goose grease is perfect for pop corn.



You can keep a moderate temperature for your frying on this range. Moderate enough to keep the fat from smoking. Save all the grease for your own cooking, or — for making glycerine to make explosives.

The foods fried in any of this grease will taste better if you never let the fat get hot enough to smoke, and if you have kept it covered in the refrigerator.

That is for the fats you save and use at home, but if there is more than you need bubbling up in your frying pan, you can send it straight off to war.

Glycerine comes from grease and glycerine is needed for all kinds of explosives.

Don't think that the extra grease from your kitchen is not enough to make saving it worth while. Just think of those two billion pounds they say we waste each year and start collecting. Hunt up a clean coffee can and get a square of cheese cloth, double thick. Empty the drippings from every spider into that can, straining it through the cheesecloth. All kinds together here. It doesn't make any difference in the rendering plant. Cover the can and put it in the refrigerator to keep the grease from getting rancid. Rancid grease yields less glycerine.

If you haven't an old coffee can handy, or a shortening tin, borrow one from a neighbor or coax it from your in-laws. Glass jars and paper cartons may seem just as good to you, but they won't do. Glass may break and the carton crush on the way to the rendering plant. The metal will carry the grease safely from your kitchen to the butcher and the plant.

Take a few minutes to clarify fats that are full of bits of meat or that have an unpleasant taste or odor. Melt the fat with an equal amount of water and heat it at a moderate temperature, stirring it now and then. You can strain it at once or after the fat is cool, and hard, skim it off, then scrape the meat and bits of charred specks from the underside.

When you have saved a pound or more, and just for your information, a pound coffee can holds about two pounds of grease, take it to your butcher. He'll buy it at a nationally established price. That will not seem much, but remember that somebody can get enough glycerine from those two pounds of grease you've poured into that tin to make five rounds of anti-aircraft fire.

By JEROME J. HENRY

Tally Ho! Coy-ote in View

When Louise Massey, girl member of the Westerners of the NBC music programs, mounts a horse, she does it the way the cowboys do around Roswell, New Mexico, where she was raised, and where today she owns a ranch. Louise just vaults into the saddle like any experienced ranch hand.

No drugstore cowhand is Louise Massey, of the Westerners, songsters who are heard on the Reville Roundup and the Plantation Party. Her vacations from radio are spent on the range acres of her own ranch in New Mexico.

Louise says she got her first riding experience when she sat behind her dad—with nothing to hang on to but his suspenders—as he rode a cow pony in pursuit of a coyote. Louise says this is the New Mexico equivalent of a British fox hunt.

Skelton Only Hopes It Will Happen Again

Radio's bad boy, Comedian Red Skelton, coined a phrase—"I dood it."

Customarily, comedians don't care for those who "steal" their tag lines. But Red Skelton points to one "stealing" that he enjoyed. A headline writer on the Los Angeles *Herald Express* topped off the news of Brig. Gen. Jimmy Doolittle's air raid on Tokyo with the phrase:

"DOOLITTLE DOOD IT."

That's okay with Red, who hopes "Doolittle'll Dood It Again." And soon.

Anyhow It's in the Family

The casting director plays funny tricks on you if both you and your brother are busy radio actors. Ask pretty Betty Wragge, heard as Peg Young on "Pepper Young's Family." She knows.

Betty and her brother, Eddie, have portrayed roles of husband and wife, cousins, gangster chieftain and gun "moll," total strangers, and one occasion, mother and son.

Once, they were actually cast as brother and sister, and were they surprised!

Seven Generations True to Drama

Anne Seymour is the possessor of an acting lineage as blueblooded as they come. She's a topflight actress in her own right, too, with radio roles including the feminine lead in "The Story of Mary Marlin."

It was back in 1740 that a handsome young Irishman named John Johnstone shocked his proud family by abandoning the ancestral military career in favor of the London stage. He must have been pretty good for not only does his name still stand out prominently in theatrical histories, but family records show that he was able to give his daughter a 20,000 pound dowry.

John Johnstone probably didn't dream that seven generations would carry on the tradition—and that his great, great, great, great granddaughter would some day be heard daily by millions of drama lovers. That's exactly what happened, with Anne Seymour playing the top role in this family drama.

NEW, COOLER
Easy Running
COW CLIPPER

World-Famous
STEWART CLIPMASTER

Over 90% of the world's clipper users own and PREFER STEWART clippers. New anti-friction tension control assures perfect tension between blades for cooler, lighter running—faster, easier clipping. Makes blades stay sharp longer. **The most powerful clipper of its kind ever made.** Lasts longer. Fan-cooled, ball-bearing motor exclusive Stewart design. Completely insulated in the special **EASY-GRIP** handle barely 2 inches in diameter. The finest, most enduring clipper ever made for cows, horses, dogs, mules, etc. *A $25.00 value for only $21.95* complete. Slightly higher West of Denver. 100-120 volts. Special voltages slightly higher. At your dealer's. Send for FREE catalog of Stewart electric and hand-power Clipping and Shearing machines. Made and guaranteed by Chicago Flexible Shaft Company, Dept. 30, 5600 Roosevelt Road, Chicago, Illinois.

Over Half A Century Making Quality Products.

NEED HELP?
It's Ready for You!

Every minute saved these days counts. Many *Dairy-Maid* users say they save thirty precious minutes daily by having all the hot water they need, where they want it, when they want it. Save time, steps and money with a

SURGE DAIRY-MAID

Electric Water Heater

Almost a necessity in the dairy barn, as clean utensils are always essential to clean milk. Supplies "piping hot" water 24 hours a day without attention other than filling, at unbelievably low cost.

Costs But Little TO INSTALL!

No expensive fittings or plumbing; simply place in most convenient location and plug in nearest outlet. Automatic control, slow heating and heavy insulation keep current consumption down.

Send for catalog, Free.

BABSON BROS. CO.

2843 West 19th Street, Dept. 5518, Chicago, Ill.

FARMERS

Solve Your Electrical Farm Problems. Save Equipment. Save Money. Get These . . .

ELECTRICAL BOOKS
3 AMAZING VOLUMES
FREE 7 DAY TRIAL

8½ x 11 in. 2200 subjects listed. Over 2000 pictures, diagrams. Sturdy Red and Gold binding.

AUTHORITATIVE. Practical, Written in easy to understand language.—Prepared by experts. Used regularly on the job by hundreds of Farmers, Electricians, service men, radio men, air cadets, students, maintenance men, etc. EASY. COMPLETE. Covers everything Electrical: Armature winding, A. C. & D. C. Motors, generators, electronics, automotive electricity, refrigeration, etc. etc. Answers your electrical questions quickly, clearly, completely. Also includes Radio, Television. Every Subject clearly indexed.

MAKE MONEY!
Learn to install farm lighting, repair motors, tractor ignition, milkers, etc. Save money, make extra cash from neighbors when you KNOW Electricity

SEE THEM RISK FREE
You don't have to risk a penny. To get your set promptly, just mail coupon. Examine books 7 days risk free. Mail coupon now. LIMITED OFFER.

FREE! 1 YR. COUNSEL
ACT NOW and receive Certificate entitling you to year of Personal Consultant Service on any electrical problem — FREE.

H. C. LEWIS, Pres., COYNE ELECTRICAL SCHOOL
500 South Paulina Street, Dept. 55-98 Chicago, Ill.

Send me the big Coyne Electrical Reference and Instruction Encyclopedia. Within 7 days after receiving the books, I'll either return them or send you $5, and $5 a month until advertised price of $12.00 is paid. We pay the shipping charges.

NAME _____

ADDRESS _____

CITY _____ STATE _____

OCCUPATION _____ AGE _____

"I sometimes wish that great, etc., grandfather Johnstone were alive today," Miss Seymour says. "If he appealed as much to London's restricted audience of the eighteenth century, he would be making a real splash with our colossal radio audiences of today!"

Good Cow Air

. . . . . (Here from page 6)

was used in all the installations in our territory. By having a door in the top of the flue, this method also facilitates using the fan to quickly remove warm ceiling air as an aid in cooling the stable, and in many instances to directly remove accumulations of hay dust. The exhaust fan is located on the side of the building away from prevailing winds and directed away from dwellings.

Intake Flues

Materials for constructing intake flues are usually available on the farm. Two intakes are installed for each seven cows. Each intake has an inside cross-sectional area of 60 square inches, and is from 18 to 24 inches in length. The intakes are insulated with ½-inch insulation board to prevent condensation and are equally spaced around the stable not closer than 15 feet apart or within 6 feet of the exhaust flue. The top of the intake flue should be 12 inches from the ceiling. If the stable is unceiled, a deflector at least 2 feet square is constructed directly above the intake.

Not a Concentration Camp

Montrose, Colo.—"It is certainly a privilege to have Old Glory fly over our 4-H club camp unmolested. We should all be very thankful that we live in America and enjoy a club camp instead of a concentration camp." So wrote a 4-H news reporter in the newspaper of the Montrose County 4-H Club Camp on Grand Mesa last summer.

WARNING—Now is the time to see to it that Suction Pumps are protected from freezing and the drain holes or "Frost Vents" in set length Pumps are open. A little attention now may prevent serious damage when Freezing Weather arrives.

Questions and Answers

Welder from Auto Generator

▶**Question:** *How can I make an electric welder by using an auto generator; also would such be practical?* R. M. K., New York

▶**Answer:** It is possible to make small electric welders out of automobile generators. The LeJay Manufacturing Company, 1406 W. Lake Street, Minneapolis, Minn., sells plans for rebuilding generators for this purpose. It is not a simple job and quite a few extra parts are required. This company also sells the parts. The reports we have had about welders built from auto generators have not been too satisfactory.

Pump Starts Every Time Water is Drawn

▶**Question:** *We are using a Westco Pressure pump which has been in service about three years and has been highly satisfactory.*

The pump uses a pressure switch which now seems to need an adjustment and my experiments have not helped very much. This switch opens at 40 lbs. and should close at 20 lbs. and in the past would pump on an average of three times per day. Now, however, the pump works just about every time you turn on a faucet.

Can you explain the necessary adjustments?

An electrician who worked on it, made it worse than ever. The distributor in this district is located quite some distance from our farm and want a price almost prohibitive for a call. J. DeG., Mo.

▶**Answer:** From what you say I believe there is nothing wrong with your pressure switch. The trouble probably is that your pressure tank has become filled with water. Without an air cushion in the tank your pump would start nearly every time you draw water.

When working properly, your pump should discharge a little air into the tank along with the water. The air volume control is located about one-third the way down from the top of the tank in the "T" to which the pressure gauge is attached. This small copper pipe or the air intake to your pump may have become clogged or there may

Your Stock and Equipment is More Necessary to the Nation Now than Ever Before

Stock, farm buildings and machinery are an essential part of your contribution to the war effort, and a dependable never failing water supply is the best investment you can make for the protection of your property and the health of your stock.

The added fire protection given by **VOGEL** Frost-Proof Hydrants, which will never freeze no matter how cold the weather, is the best investment you can make today.

Ask your plumbers about **VOGEL** Frost-Proof Hydrants or write us direct for information.

JOSEPH A. VOGEL COMPANY, Wilmington, Delaware

be some difficulty with the release valve. I would suggest that you drain your pressure tank by taking the plug out of the top to admit air and disconnecting the piping at the bottom to permit the water to flow out. Disconnect the motor by opening the switch or removing the fuse while doing this. Then put the plug back and connect your piping and start the pump. The pump should work satisfactorily. If later the tank again becomes water logged, you had better send your air release mechanism back to the Westco Company for replacement. There is a small exchange charge.

If draining the tank does not correct the difficulty, write the Westco Company for exchange arrangement on pressure switch.

Chicken Eviscerator

▶**Question:** *Some time ago I wrote to you about a picking machine. We got one and it works fine. What I would like to know now is there a machine that will draw the inside of a chicken out.*

F. R. K., New York

▶**Answer:** There may be a machine on the market for drawing poultry but I have never seen or heard of one. Perhaps when we publish this question some of our readers can tell us of such a machine: or it may be a chance for someone to invent a vacuum eviscerator.

Electric Dehairing Machine

▶**Question:** *I do custom butchering and I am told there is a company that makes a small electric dehairing machine like the large packing companies use. Can you give me the name and address of the company and the approximate cost of the machine?*

R. N. S., Ind.

▶**Answer:** The Cincinnati Butcher's Supply Co., Cincinnati, O., make a 5 hp motor driven machine with a capacity of 25 small hogs per hour. That is the smallest one. It costs about $800 installed. This machine takes the hog after it is scalded and keeps turning it and applying flexible scrapers until the hair is all removed.

Wiring in Wartime

▶**Question:** *Please send me information on the wiring of a house. That is, will we be able to get wiring? Will you tell me where I can find out all about it and where we can buy necessary material?*

R. R. V., Ohio

▶**Answer:** It is now necessary to have a priority rating of A-1K or better in order to buy wiring materials. Such a rating is given only when the wiring is for:

1. Maintenance and repairs.
2. Living quarters for war workers.
3. To be used in war materials or the production of war materials.

It is doubtful if a farm house would qualify under these provisions unless it played an important part in the production of war crops. If you would want to take the slim chance of having it approved, you would have to apply on Form PD-1A to the War Priorities Board for a priority. Your local war council will have the necessary blank.

A very good little booklet on Wiring Simplified by H. P. Richter may be obtained from Mr. Richter for 25c by addressing Park Publishing Company, 2307 Park Place, Evanston, Ill.

Electric Fence for Climbing Coons

▶**Question:** *I have a two-acre garden spot that I wish to protect by an electric attachment. This spot is now surrounded by a 4½ ft. standard wire fence. This standard wire fence is covered with a one-inch poultry netting, the lower edge being buried six inches in the ground to guard against rabbits or others gaining entrance at the bottom.*

We find now that coons and other climbers go over the top of the fence. We have in mind installing electric wires along top of fence. Will you please advise where I can get reliable advice on the cost with plan for installation, the best type of electric current to use. Is 110

SPEED EGG PRODUCTION ON THE WINTER FRONT with the TRUMBULL WATER WARMER

Water at 50° Means NON-STOP EGG PRODUCTION even in coldest weather with less work. Automatic operation saves current, cuts cost. NO FIRE HAZARD; NO RADIO INTERFERENCE.

Ask Your Dealer
Write for Folder
TRUMBULL ELECTRIC MANUFACTURING CO.
1012 Woodford Avenue
Plainville, Conn.

Monarch ELECTRIC and COAL-WOOD COMBINATION RANGES

Today's most popular "high line" range: electric on one side—coal or wood on the other. Provides year 'round kitchen comfort.

See a MONARCH outlet or —

Write for booklet illustrating complete line.

MALLEABLE IRON RANGE CO.
1242 Lake Street Beaver Dam, Wis.

volt A.C. safe? Your advice will be appreciated by a number of garden owners. R. M., Wash.

▶**Answer:** An approved electric fence controller connected to a properly installed wire on top of your fence posts should be entirely safe and give you complete protection from animals climbing over the fence.

Information on the equipment and how to install it may be obtained from Babson Bros., 2843 W. 19th street, Chicago, Ill., whose controller is approved by the Wisconsin Accident Commission or the Prime Manufacturing Company, Milwaukee, Wis., which has a fencing unit approved by the Underwriters.

Motors for Feed Room

▶**Question:** *Will you please give me the size of a portable electric motor necessary to perform the following duties: to grind, mix 500 lbs. of poultry feed at once? Would motor lift sacks of grain weighing from 100 to 200 lbs. to feed the grinder? Would you please recommend the manufacturer of the grinder and mixer to me?*

Miss H. McC., Oregon

▶**Answer:** A 5 hp portable motor will grind from 400 to 1,500 pounds of grain per hour depending upon the kind of grain and the fineness of grinding. A ¾ hp. motor will operate a batch feed mixer having a capacity of 500 pounds at one batch. Both of these machines could be operated by the same 5 hp motor. It will require about 1 hp to operate an elevator to raise sacks of grain weighing 100 to 200 pounds.

Small feed grinders which would answer your requirements are made by the C. S. Bell Company, Hillsboro, Ohio, and the Meadows Mill Company, Inc., North Wilkesboro, N. C. Feed mixers are sold by the C. S. Bell Company and the Brower Mfg. Company, Quincy, Illinois.

May I suggest that you get in touch with your Power Company office and ask for the help of a rural service man. He might be able to save you money by suggesting an economical layout for your granary.

Protecting Poultry Fountain

▶**Question:** *I am going to have installed in my poultry house an automatic water fountain and would like instructions for wiring it so as to prevent freezing in severe weather.*

Mrs. J. H. V., Conn.

▶**Answer:** Use a small thermostatically controlled heater in the pan; or if it is just a short pipe and float valve which needs protection, the easiest method and one for which

"Ever notice that fellows from homes that have an electric range are extremely popular?"

you could probably get equipment with least trouble would be to use an electric light bulb in the bottom of a boxed in compartment enclosing the pipe and valve. The heat would rise in this box and keep the valve from freezing.

Apple Cold Storage

▶**Question:** *Please send me information on how I can put in a refrigerator system for a small apple cold storage. We have a building of 1,000 bushels capacity and would like to know how it could be done. The building is made of concrete with a refrigerator door as its only entrance.* S. S., New York

▶**Answer:** The installation of a refrigeration system for a 1,000 bushel apple cold storage will involve first, the insulation of the room and then the installation of suitable cooling coils and a refrigeration compressor unit.

Perhaps the first thing you should do would be to make a sketch of your proposed storage room giving the dimensions, thickness of walls, floor and ceiling and send this to some refrigeration company like the General Electric Refrigeration Department, Bloomfield, N. J., the Westinghouse Refrigeration Department, East Pittsburgh, Pa., or the Frigidaire Company at Dayton, Ohio, asking for their suggestions regarding the insulation of the room and the installation of equipment. You would probably need about a 2 hp compressor unit. Since all refrigeration equipment sold now requires a priority, you would have to apply to the War Production Board for a priority on a specific machine after you learn exactly what you will need. The refrigeration companies can give you further information on this point.

I would also suggest that you get in touch with the rural service man of your Power Company as he might know of refrigeration equipment which could be obtained locally. They often have refrigeration engineers who can also be helpful.

What I Can Do for War

. . . . . (Here from page 17)

already given over 1,000 plants from my electric heated hotbed. And since I have a constant supply of water from our automatic pressure pump my vegetable gargen (as well as orchard, berries, livestock and chickens) will thrive and produce more for home and country defense.

We are now working out plans for every club member to have a garden every month in the year. Several club members have already taken to saving all waste paper, metals, rags, etc., and when sold the money will be used to buy more garden seeds, tools, etc., for the next garden crop.

Editor's Note: If you are going to have a hotbed next spring for early plants in a cold climate, it would be well to get in clean, uncontaminated soil this fall before it freezes. Watch for articles this winter in ELECTRICITY ON THE FARM on making and using electric hotbeds.

"I think we can assure reasonably adequate prices and income to farmers. I am genuinely alarmed about farm labor, farm machinery and other supplies essential to production. These obstacles cannot be overcome by prices alone and are more serious than the people realize."—Secretary Wickard.

CLASSIFIED ADVERTISING

LABOR-SAVING ELECTRIC SUPPLIES. Time switches. Water heaters. Burglar and temperature alarms, etc. . . . SAVE time, material, and oil—electrify old incubators, homemade brooders, etc. here's a proven Lyon part for the job. Send today for free details. LYON RURAL ELECTRIC CO., Dept. EF, Greensboro, N. Car., or San Diego, Calif.

POULTRY TIME SWITCHES pay for themselves in increased egg production. Five models from $3.95 to $18. All-electric or manually wound. With or without dimmer circuit. Write for information. AUTOMATIC ELECTRIC MANUFACTURING CO., Mankato, Minnesota.

War Time Contest

SUBJECT: "How We Saved Service"

RULES OF THE CONTEST

Explanation of the Subject. Many repair and service men are now in the armed forces or war industries. There is a shortage of gasoline and tires. The saving of service calls under these conditons is a direct contribution to the war effort. This saving may be brought about by good care of your equipment, making service or repair calls unnecessary; or it may be due to having a supply of fuses on hand and knowing how to replace them; or keeping your extension cords in good condition and motors oiled. Or you might save service by using electric equipment to keep your farm machines in repair. Tell anything you have done to save calling a service or repair man, or to extend the life of your electric equipment. Your own ***actual experiences*** are what is wanted.

Prizes for the best letters or statements will be awarded as follows:

First Prize: A $25 War Bond.
Second Prize: $5 in War Stamps.
Five Prizes: Each $3 in War Stamps.

We will also pay $1 each in war stamps for any other entries published.

In addition, we will pay $1 to $3 in war stamps for each photograph or sketch illustrating your statement and which we can use.

Winners will be announced in the January issue.

Letters need not be long—the shorter the better. Facts and figures are given more weight than style or form of presentation. The idea of the letters is to ***help someone else to save service.***

In case of a tie each winning contestant will receive the full prize to which he or she is entitled.

All members of the family may enter the contest, but each contestant may submit only one statement.

The decision of the judges is final and all entires become the property of this magazine.

Send your entry on a plain piece of paper, letterhead or government postcard.

Send entries to the Wartime Contest Editor, ELECTRICITY ON THE FARM, 24 W. 40th St., New York City. They must be postmarked ***before*** December 1.

INFORMATION SERVICE

As a reader of ELECTRICITY ON THE FARM you are entitled to our information service free of cost. Here is how it works.

Whenever you are seeking information about any equipment or application for electricity, first look through the advertisements in this issue. They are your best guide.

Then, if you do not find what you want, just use the blank at right to tell us your problem and we will see that you get the information you want. That's all there is to it. Easy, simple, and it costs absolutely nothing.

—Use this Coupon—

ELECTRICITY ON THE FARM
Readers' Service Dept.
24 W. 40th St., New York

Gentlemen: Please have sent to me, without obligation, information about the following:

.....
.....
.....

NAME .....
ADDRESS .....
I GET ELECTRICITY FROM.....11-42

ARE YOU HAVING PRIORITY TROUBLES?

Anything that might seriously impair the production of Food should be brought to the attention of your County Farm Equipment Rationing Board. Your County U.S.D.A. War Board Chairman is also Farm Equipment Rationing Committee Chairman.

if you need nails, bolts, machinery parts, electrical materials, anything vital to production . . . and don't seem able to get it . . . take the problem to your County Agricultural Agent or directly to your local War Board, Farm Equipment Rationing Section. There is a procedure to follow for almost every imaginable need, and these procedures are not nearly so complicated as the forms and paper work might lead you to believe. Remember, too, the Board's interest is the same as yours—to win the battle of Food Production. It is definitely concerned with your problems and is looking for ways to be of assistance.

CONSULT YOUR LOCAL U. S. D. A. WAR BOARD... *Freely!*

YOUR ELECTRIC COMPANY

ELECTRICITY ON THE FARM
24 West 40th Street
New York, N. Y.

Postmaster — If undeliverable for ANY REASON, notify sender, stating reason on **Form 3547**, postage for which is guaranteed.

LIBRARY
OREGON AGRI. COLLEGE
CORVALLIS, ORE.
MS

Sec. 562 P. L. & R.
U. S. POSTAGE
PAID
Norwalk, Conn.
Permit No. 8